

**Amendments to the Specification:**

Please replace the paragraph on page 9, lines 13 and 14, with the following amended paragraph:

Fig. 2a – 2ef various schematically illustrated temperature-time curves for a semiconductor layer treated in an RTP system.

Please replace the paragraph beginning on page 14, line 13, and continuing through page 15, line 12, with the following amended paragraph:

Fig. 2b shows a further example of the inventive method, according to which the temperature  $T_2$  is below the decomposition temperature  $T_H$ . Here also at least one semiconductor layer is heated for at least one time interval BE of less than 120s to a temperature greater than the first temperature  $T_1$  and for a second time interval CD of less than 60s is held at a temperature  $T_2$ . The length of the second time interval CD is here less critical since the second temperature  $T_2$  is below the decomposition temperature  $T_H$ . The position and the duration of the third time interval can be selected in conformity with the foregoing discussion in conjunction with Fig. 2a. The position and duration of the third time interval is optimized as a function of the influence of the diffusion of the hydrogen, which results during the consumption of the Mg (foreign atom) hydrogen complex, by the free charge carriers generated by the UV radiation. This is to be determined experimentally and depends upon the semiconductor layer. Thus, for example, it can be advantageous, during the process range AB (in Fig 2b), to irradiate the layer with UV light. As a result, the Mg-H complex is already broken up at low temperatures. During the process range BD, the hydrogen diffuses at very high

diffusion constants into the surface regions of the layer. During the cooling-off phase DF, a renewed UV irradiation is effected in order to prevent a repassivation of the Mg (the foreign atoms) in GaN (in II-VI or III-V semiconductors). On the whole, with this method one obtains a high degree of activation.

Please insert the following abstract after page 22 of the specification:

#### Abstract of the Disclosure

A method of formally treating at least one layer for activating foreign atoms passivated in the layer by hydrogen is provided. The at least one layer is heated, in a first time interval of less than 120 seconds, above a first temperature at which a specific sheet resistance of the at least one layer decreases. The at least one layer is heated, in a second time interval which is within the first time interval and is less than 60 seconds, to above a decomposition temperature of the layer. Charge carriers are produced in the at least one layer during at least one third time interval, by electromagnetic radiation, wherein the energy of such electromagnetic radiation is greater than an energy gap of the at least one layer.